WHAT IS CLAIMED IS:

1. A magnetoresistive read head comprising:

a magnetoresistive sensor; and

a bias structure adjacent to the magnetoresistive sensor, the bias structure providing a magnetostatic bias field for the magnetoresistive sensor, the bias structure comprising:

an underlayer;

a bias layer over the underlayer; and

at least one dusting layer directly below at least one of the underlayer or the bias layer.

2. The magnetoresistive read head of Claim 1, wherein the dusting layer is directly below the underlayer.

3. The magnetoresistive read head of Claim 2, wherein the dusting layer comprises discontinuous, densely-packed, small islands of material.

4. The magnetoresistive read head of Claim 3, wherein the dusting layer comprises a material having a sufficiently high surface energy and sufficiently low atomic mobility to form the islands.

5. The magnetoresistive read head of Claim 2, wherein the dusting layer is formed by ion-beam deposition.

6. The magnetoresistive read head of Claim 2, wherein the dusting layer comprises a material having a body-centered-cubic crystallographic structure or a CsCl-type crystallographic structure.

7. The magnetoresistive read head of Claim 2, wherein the dusting layer comprises a material selected from a group consisting of tungsten, tantalum, niobium, rhodium, molybdenum, tungsten-titanium alloy, tungsten-chromium alloy, and nickel-aluminum alloy.

8. The magnetoresistive read head of Claim 2, wherein the dusting layer comprises platinum or titanium.

9. The magnetoresistive read head of Claim 2, wherein the dusting layer comprises a material having a melting temperature above a melting temperature of the underlayer.

10. The magnetoresistive read head of Claim 2, wherein the dusting layer comprises a material having a melting temperature above 1800 degrees Celsius.

11. The magnetoresistive read head of Claim 2, wherein the dusting layer has a thickness less than approximately 10 Angstroms.

12. The magnetoresistive read head of Claim 2, wherein the dusting layer has a thickness in a range from approximately 2 Angstroms to approximately 6 Angstroms.

13. The magnetoresistive read head of Claim 2, wherein the dusting layer has a thickness of approximately 3 Angstroms.

14. The magnetoresistive read head of Claim 1, wherein the dusting layer is directly below the bias layer.

15. The magnetoresistive read head of Claim 14, wherein the dusting layer comprises discontinuous, densely-packed, small islands of material.

16. The magnetoresistive read head of Claim 15, wherein the dusting layer comprises a material having a sufficiently high surface energy and sufficiently low atomic mobility to form the islands.

17. The magnetoresistive read head of Claim 14, wherein the dusting layer is formed by ion-beam deposition.

18. The magnetoresistive read head of Claim 14, wherein the dusting layer is continuous and is significantly lattice matched to both the underlayer and the bias layer.

19. The magnetoresistive read head of Claim 14, wherein the dusting layer comprises a material having a body-centered-cubic crystallographic structure or a CsCl-type crystallographic structure.

20. The magnetoresistive read head of Claim 14, wherein the dusting layer comprises a material selected from a group consisting of tungsten, tantalum, niobium, rhodium, molybdenum, tungsten-containing alloy, chromium-containing alloy, tungsten-titanium alloy, tungsten-chromium alloy, and nickel-aluminum alloy.

21. The magnetoresistive read head of Claim 14, wherein the dusting layer comprises a material having a melting temperature above a melting temperature of the underlayer.

22. The magnetoresistive read head of Claim 14, wherein the dusting layer comprises a material having a melting temperature above 1800 degrees Celsius.

23. The magnetoresistive read head of Claim 14, wherein the dusting layer has a thickness less than approximately 10 Angstroms.

24. The magnetoresistive read head of Claim 14, wherein the dusting layer has a thickness in a range from approximately 5 Angstroms to approximately 10 Angstroms.

25. The magnetoresistive read head of Claim 14, wherein the dusting layer has a thickness of approximately 7 Angstroms.

26. The magnetoresistive read head of Claim 1, wherein the at least one dusting layer comprises a first dusting layer directly below the underlayer and a second dusting layer directly below the bias layer.

27. The magnetoresistive read head of Claim 1, wherein the magnetoresistive sensor is selected from a group consisting of a giant magnetoresistive (GMR) sensor, an anisotropic magnetoresistive (AMR) sensor, a tunneling magnetoresistive (TMR) sensor, a spin-dependent-tunneling (SDT) sensor, a spin valve (SV) sensor, a current-in-plane (CIP) sensor, and a current-perpendicular-to-the-plane (CPP) sensor.

28. The magnetoresistive read head of Claim 1, wherein the magnetoresistive sensor is located over an aluminum oxide layer on a silicon substrate.

29. The magnetoresistive read head of Claim 1, wherein the underlayer comprises a material selected from a group consisting of chromium, chromium-containing alloy, tungsten, tungsten-containing alloy, nickel-aluminum alloy, and iron-aluminum alloy.

30. The magnetoresistive read head of Claim 29, wherein the chromium-containing alloy comprises a material selected from a group consisting of titanium, vanadium, molybdenum, maganese, and tungsten.

31. The magnetoresistive read head of Claim 29, wherein the tungsten-containing alloy comprises a material selected from a group consisting of chromium, titanium, vanadium, and molybdenum.

32. The magnetoresistive read head of Claim 1, wherein the underlayer has a thickness in a range from approximately 20 Angstroms to approximately 250 Angstroms.

33. The magnetoresistive read head of Claim 1, wherein the underlayer has a thickness in a range from approximately 70 Angstroms to approximately 200 Angstroms.

34. The magnetoresistive read head of Claim 1, wherein the bias layer comprises a material selected from a group consisting of CoPt, CoCrPt, CoCrPtTa, CoCrPtB, CrPt, CoPt, and FePt.

35. The magnetoresistive read head of Claim 1, wherein the bias layer has a thickness in a range from approximately 75 Angstroms to approximately 300 Angstroms.

36. The magnetoresistive read head of Claim 1, wherein the bias layer has a thickness in a range from approximately 100 Angstroms to approximately 250 Angstroms.

37. The magnetoresistive read head of Claim 1, further comprising an electrically conductive lead layer over the bias layer.

38. The magnetoresistive read head of Claim 37, wherein the lead layer comprises a material selected from a group consisting of gold, tungsten, rhodium, chromium, and copper.

39. The magnetoresistive read head of Claim 37, wherein the lead layer has a thickness in a range from approximately 100 Angstroms to approximately 1000 Angstroms.

40. A magnetoresistive read head comprising:

a magnetoresistive sensor; and

a bias structure adjacent to the magnetoresistive sensor, the bias structure providing a magnetostatic bias field for the magnetoresistive sensor, the bias structure comprising:

an underlayer;

a bias layer over the underlayer;

a first dusting layer directly below the underlayer; and

a second dusting layer directly below the bias layer.

41. A method of fabricating a bias structure of a magnetoresistive read head comprising a magnetoresistive sensor formed on a substrate, the bias structure adjacent to the magnetoresistive sensor, the bias structure providing a magnetostatic bias field for the magnetoresistive sensor, the method comprising:

forming an underlayer;

forming a bias layer over the underlayer; and

forming a dusting layer either directly below the underlayer or directly below the bias layer.

42. The method of Claim 41, wherein forming the underlayer comprises depositing an underlayer material by ion-beam deposition.

43. The method of Claim 41, wherein forming the bias layer comprises depositing a bias layer material by ion-beam deposition.

44. The method of Claim 41, wherein forming the dusting layer comprises depositing a dusting layer material by ion-beam deposition.

45. The method of Claim 44, wherein depositing the dusting layer material is performed prior to forming the underlayer.

46. The method of Claim 45, wherein the dusting layer material is deposited at a rate of approximately 0.3 Angstroms per second.

47. The method of Claim 46, wherein depositing the dusting layer material is performed for a time period having a duration ranging from approximately 8 seconds to approximately 30 seconds.

48. The method of Claim 45, wherein the dusting layer material is deposited at a rate of approximately 0.7 Angstroms per second.

49. The method of Claim 48, wherein depositing the dusting layer material is performed for a time period having a duration ranging from approximately 2 seconds to approximately 15 seconds.

50. The method of Claim 44, wherein depositing the dusting layer material is performed after forming the underlayer and prior to forming the bias layer.

51. The method of Claim 50, wherein the dusting layer material is deposited at a rate of approximately 0.3 Angstroms per second.

52. The method of Claim 51, wherein depositing the dusting layer material is performed for a time period having a duration ranging from approximately 15 seconds to approximately 30 seconds.

53. The method of Claim 50, wherein the dusting layer material is deposited at a rate of approximately 0.7 Angstroms per second.

54. The method of Claim 53, wherein depositing the dusting layer material is performed for a time period having a duration ranging from approximately 7 seconds to approximately 15 seconds.

55. A magnetoresistive read head comprising:

a magnetoresistive sensor; and

a bias structure adjacent to the magnetoresistive sensor, the bias structure providing a magnetostatic bias field for the magnetoresistive sensor, the bias structure comprising:

an underlayer having an average underlayer grain size; and

a bias layer over the underlayer, the bias layer having an average bias layer grain size, the average bias layer grain size being larger than the average underlayer grain size.